

REMARKS

In response to the Office Action mailed July 5, 2002, Applicants respectfully request reconsideration. To further the prosecution of this application, each of the issues raised in the Office Action is addressed herein. The application as now presented is believed to be in allowable condition.

Claims 1, 16, 17-19, 21, 22, 25-33 and 66-298 currently are pending in this application, of which claims 1, 16, 17, 25, 66, 80 and 85 are independent claims. In this amendment, claims 2-15, 20, 23, 24 and 34-65 have been cancelled, claims 1, 16, 17, 21, 22, 25, 31-33, 66, 74-76, 79, 80 and 82-85 have been amended, and dependent claims 86-298 have been added to further define Applicants' contribution to the art. Applicants point out that each of new dependent claims 86-298 is fully supported in the specification and depends from an already allowed or allowable independent claim; thus, these new claims are allowable based at least upon their dependency.

A. Telephone Conference with the Examiner

Initially, Applicants' representatives appreciate the courtesies extended by Examiner Lee in conducting the telephone interview on October 29, 2002.

During the interview, Applicants' representatives indicated to the Examiner that the Applicants wished to accept the claims deemed allowed by the Examiner, rewrite claims indicated as reciting allowable subject matter to also accept these claims, and cancel claims withdrawn from consideration in order to place the application in condition for allowance. As a result of the amendments herein, independent claims 1, 16, 17, 25, 66, 80 and 85 are now pending in this application.

In addition, as also discussed during the interview, Applicants have added several dependent claims from each of independent claims 25, 66, and 85 to further define Applicants' contribution to the art. In particular, claims 86-209 have been added to depend from claim 25, claims 210-249 have been added to depend from claim 66, and claims 250-298 have been added to depend from claim 85. Support in the specification for these new claims, as well as the general organization of the new claims, is discussed in detail further below.

B. Drawings

In part 2 of the Office Action, the drawings were objected to for failing to include the reference sign “2008” as mentioned on line 10 of page 56 in the description. This reference sign “2008” includes a typographical error and should read “2408.” In particular, a tube coupler 2408 is shown in Fig. 28. Accordingly, rather than amend the drawings in this regard, Applicants have amended the specification to correct this error.

Additionally, Fig. 2 has been changed to bring the drawing into agreement with the amendment to the specification correcting the duplicate use of the reference numeral 350. The “mounting” is now indicated in the specification and the drawing using reference character 310. Correction to the attached copy of Fig. 2 is shown in red ink. Approval of the proposed correction to the drawing is hereby requested. A revised formal drawing for Fig. 2 including this change also is enclosed with a Letter to the Official Draftsperson requesting entry of the drawing into the application.

C. Specification

The specification has been amended to address the issues raised by the Examiner in part 3 of the Office Action:

The reference character 350 has been amended to read 310 in the paragraph beginning at line 12 of page 18 to eliminate the duplicate use of the reference character 350.

The reference character 364 indicating the “conductive sleeve” has been changed to the reference character 368 in order to bring the specification into agreement with the drawings and for consistency with its use throughout the specification.

The reference character 2008 has been changed to 2408 in the paragraph beginning at line 13 on page 55 to address the objection to the drawings indicated in part 2 of the Office Action.

D. Claim Objections

In part 4 of the Office Action claims 4, 8 and 66 were objected to for typographical and punctuation errors.

Claims 4 and 8 are canceled and the objection is now moot.

Claim 66 has been amended to address the Examiner’s objection to the claim.

E. Rejections Under 35 U.S.C. § 112

In part 5 of the Office Action, claims 10, 31-33, 74-76, 79, 80-82 and 84 (including independent claim 80) are rejected under 35 U.S.C. § 112, second paragraph, for indefiniteness.

Claim 10 has been canceled and the rejection is therefore moot.

Claim 31 has been amended to depend from claim 28, which provides antecedent basis for the language “said housing.” Claim 31 is further amended to overcome issues of clarity raised in the rejection, and is now believed to satisfy the statute.

Claim 32 has been amended to remove the term “said lamp” and replace it with “said device adapted for holding fluorescent tubes,” referring to the language recited in base claim 25.

Claims 33, 74, 75, and 76 have been rewritten to address the various issues outlined in the Office Action, as discussed during the telephone interview with the Examiner. The amended claims are now believed to be clear enough to satisfy the statute.

Claim 79 has been amended to depend from claim 78, which provides the antecedent basis for the language “said LED.”

Independent claim 80 has been amended to clarify the relationship between the elements in the indicated limitation. The amendments are believed to place claim 80 in allowable condition. Claim 81 is believed to be allowable based at least on its dependency.

Claim 82 has been amended to reflect the amendments to base claim 80, and the amended language is therefore believed to be clear.

Claim 84 has been amended to depend from claim 83, which provides the antecedent basis for the term “said range of color temperatures.”

In view of the foregoing, Applicants respectfully request that the claim rejections under 35 U.S.C. § 112 be withdrawn.

F. Rejections Under 35 U.S.C. § 102

In part 7 of the Office Action, claims 1-11 and 17-22 were rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by Boerner et al. (U.S. Patent No. 6,234,648). In part 9 of the Office Action, claims 1, 2 and 12-14 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Turnbull et al. (U.S. Patent No. 5,803,579).

While not acceding to the appropriateness of these rejections, Applicants have amended some of the rejected claims to accept subject matter deemed allowable by the Examiner (as discussed in Section G below), and cancelled other rejected claims to expedite allowance of the application. In particular, of the claims rejected under 35 U.S.C. § 102, claims 1, 16 and 17 have been amended to accept allowable subject matter, and claims 2-15 and 20 have been cancelled. In view of the foregoing, the claim rejections under 35 U.S.C. § 102 are moot.

Applicants respectfully reserve the right to file one or more related applications directed to the subject matter of the claims prior to the amendments herein.

G. Allowable Subject Matter

Applicants note with appreciation that on page 5 of the Office Action, claims 15, 16, and 23 were indicated as being allowable if rewritten in independent form including all of the limitations of their respective base claims and any intervening claims. In addition, claims 31-33, 74-76, 79, 80-82, and 84 (including independent claim 80) would be allowable if rewritten to overcome rejections under 35 U.S.C. § 112, second paragraph.

Independent claim 1 has been amended to incorporate all the subject matter of claim 15. Accordingly, claim 1 is believed to be in allowable condition. Claim 16 has been rewritten in independent form including all of the limitations of base claim 1 (as it appeared before amended in this response). Accordingly, claim 16 is believed to be in allowable condition.

Claim 17 has been amended to incorporate all the subject matter of claim 23 and intervening claim 20, and hence also is believed to now be in condition for allowance. Claims 18, 19, 21 and 22 depend from claim 17, and are believed to be allowable based at least on their dependency.

Independent claim 80 has been amended to overcome rejections under 35 U.S.C. § 112 as indicated above in Section E. Accordingly, claim 80 is believed to be in allowable condition. As discussed with the Examiner during the telephone conference, claim 80 also has been amended to include the limitation of at least one white LED, which is clearly supported in the specification at least on page 49, line 15 *et seq.* Claims 81-84 depend from claim 80 and are allowable based at least upon their dependency.

H. Allowed Claims / Newly Added Dependent Claims

Applicants also note with appreciation that on page 5 of the Office Action, claims 25-30, 66-73, 77, 78, 83 and 85 (including independent claims 25, 66 and 85) are allowed. As discussed with the Examiner during the telephone conference, independent claim 25 has been amended to address a noted misspelling, and each of the independent claims 66 and 85 has been amended to include the limitation of at least one white LED, which is clearly supported in the specification at least on page 49, line 15 *et seq.*

As also discussed with the Examiner, in view of the allowance of claims 25, 66, and 85, Applicants have added herein several dependent claims from each of the allowed independent claims to further define Applicants' contribution to the art. In particular, claims 86-209 have been added to depend from claim 25, claims 210-249 have been added to depend from claim 66, and claims 250-298 have been added to depend from claim 85.

Each of the newly added dependent claims is either explicitly supported in the specification, or supported by the disclosure of U.S. Patent No. 6,016,038, which is incorporated by reference in the specification on page 18, lines 2-3. A copy of this patent is enclosed herewith for the Examiner's convenience. Also for the Examiner's convenience, provided below is a list of citations for each new dependent claim indicating where support for the claims can be found in the specification and/or in U.S. Patent No. 6,016,038.

Applicants note for the Examiner that the claim set 86-209 depending from independent claim 25 forms a superset of claim sets 210-249 and 250-298 depending from independent claims 66 and 85, respectively. In particular, each of claims 210-298 is substantially similar to one of claims 86-209.

Accordingly, support for each of claims 86-209 is explicitly detailed below, and the correspondence between claims 210-298 and claims 86-209 is given in Table 1 below. For example, claims appearing in the same row of Table 1 recite substantially similar subject matter. As such, the citation provided in the last column indicates the support for each claim in the same row.

It should be appreciated that the citations given below and in Table 1 are not necessarily the only locations in the specification which provide support for the new dependent claims. Furthermore, the claims are not necessarily limited to the embodiments described in the

citations, as the citations are provided merely to assist the Examiner in reviewing the claims and are not in any way intended to limit the scope of the claims.

Support for new dependent claims 86-209 is as follows:

Claim 86: Please refer to Pages 37 and 38 for a discussion of white light characteristics and Page 42, line 12, through page 45, line 7 for a discussion of white light spectrums.

Claim 87: Please refer to Page 49, line 15 et. seq.

Claim 88: Page 39, lines 13-17, discuss mixing electromagnetic radiation from a plurality of component illumination sources.

Claims 89-96: Page 42, line 12, through page 45, line 7, discuss white light spectrums including continuity across the photopic range (Page 42, lines 2-4), spectral peaks and valleys (Page 43, line 5 through Page 44, line 9, esp. Page 44, lines 4-9), and background noise (Page 44, lines 10-17).

Claims 97-103: Page 45, line 8, through page 48, line 7, discuss producing the spectrums of claims 89-96 with LEDs.

Claims 104 and 105: Please refer to page 48 lines 13-18.

Claim 106: The specification includes multiple places discussing a controller to control the intensity of radiation. In particular see page 29 lines 20-23, page 19 lines 13-18, etc.

Claim 107: Please refer to incorporated Patent No. 6,016,038 at Col. 6 line 19 et. seq.

Claim 108: Please refer to incorporated Patent No. 6,016,038 at Col. 5 lines 27-67.

Claim 109: Please refer to incorporated Patent No. 6,016,038 at Col. 7 lines 14-40.

Claims 110-112: Please refer to citations as listed above in connection with claim 106.

Claims 113-115: Please refer to page 30, lines 5-8; page 31, line 8 through page 33, line 19; and Figs. 7, 8a, 8b, 9, 10a and 10b for disclosure regarding user input, user interfaces, etc.

Claims 116-117: Please refer to page 54 final paragraph and pages 55 and 56.

Claim 118: Please refer to citations as listed above in connection with claim 106.

Claim 119: Please refer to page 30, lines 5-8.

Claim 120 and 121: Please refer to citations above in connection with claims 113-115.

Claim 122: Please refer to page 31, lines 21-23, and Fig. 9.

Claim 123: Please refer to page 32, lines 15-19.

Claim 124-126: Please refer to pages 31-33 and Figs. 7-10 in general, and specifically to page 33, lines 7-8, and page 57, lines 22 and 23, for disclosure regarding user interfaces arranged on and proximate to a lighting fixture and mounted to a wall.

Claims 127-132: Please refer to page 31, line 14 through page 32, line 14 for disclosure regarding a computer system user interface.

Claim 133: Please refer to page 27, lines 20-23.

Claim 134 and 135: Please refer to page 58, line 22 through page 59, line 3 for disclosure regarding remote control and receivers.

Claims 136-139: Page 49, lines 15-18 introduces the concept of an LED with a phosphor.

Claims 140-142: Page 50, line 17 through page 52, line 4 discuss the use of filters.

Claims 143 and 144: Please refer to page 53, lines 3-6.

Claims 145: Please refer to the citation above in connection with claim 106.

Claims 146-148: Please refer to citations above in connection with claims 107-109.

Claims 150-152: Please refer to page 52, line 18 through page 53, line 21.

Claims 153-157: Please refer to citations above in connection with claims 113-115 and 119-123.

Claim 158: Please refer to page 49, lines 16-20.

Claims 160-163: Please refer to page 45, line 8 through page 48, line 18 in combination with the citations above in connection with claims 143, 144 and 158.

Claims 164 and 165: Please refer to the citation above in connection with claims 106 and 118.

Claims 166-168: Please refer to citations above in connection with claims 107-109.

Claims 169-173: Please refer to citations above in connection with claims 113-115 and claims 119-123.

Claims 174-182: Please refer to page 54, line 16 through page 58, line 5 and Figs. 5a and 5b.

Claims 183 and 184: Please refer to page 23, line 12 through page 24, line 15.

Claim 185: Please refer to the citation above in connection with claim 106.

Claims 186-188: Please refer to citations above in connection with claims 107-109.

Claims 189-194: Please refer to citations above in connection with claims 113-115 and claims 118-126.

Claims 195-198: Please refer to page 54, line 16 through page 58, line 5.

Claims 200-206: Please refer to page 33, line 20 through page 36, line 20.

Claim 207: Please refer to citations above in connection with claim 106.

Claims 208 and 209: Please refer to citations above in connection with claims 113-115 and 119-123.

Please refer to Table 1 below regarding support citations for claims 210-249 and claims 250-298.

Table 1

Claims Depending from Claim 25	Claims Depending from Claim 66	Claims Depending from Claim 85	Support in Specification and Incorporated Reference
86			Pgs. 37 and 38 and Pg. 42, line 12, through page 45, line 7.
87			Pg. 49, line 15 et. seq.
88	210	250	Pg. 39 lns.13-17
89		251	Pg. 42 ln.12 - Pg. 45 ln. 7
90			" "
91	211		" "
92			" "
93			" "
94			" "
95	212	252	" "
96	213	253	" "
97	214		Pg. 45 ln. 8 - Pg. 48 ln. 7
98			" "
99	215		" "
100	216		" "
101	217	254	" "
102	218		" "
103	219		" "
104	220	255	Pg. 48 lns. 13-18
105	221	256	" "
106	222	257	Pg. 29 lns. 20-23, Pg. 19 lns.13-18
107	223	258	Patent No. 6,016,038 at Col. 6 line 19 et. seq.
108	224	259	Patent No. 6,016,038 at Col. 5 lines 27-67.

109	225	260	Patent No. 6,016,038 at Col. 7 lines 14-40.
110		261	See citation for claim 106
111			" "
112			" "
113	226	262	Pg. 30 lns. 5-8, Pg. 31 ln.8 - Pg. 33 ln. 19 and Figs. 7-10
114	227	263	" "
115			" "
116			Pg. 54 ln.16 - Pg. 56
117			" "
118	228	264	See citation for claim 106
119	229	268	Pg. 30 lns. 5-8
120	230		See citation for claim 113
121	231	269	" "
122	232	270	Pg. 31 lns. 21-23, Fig. 9
123	233	271	Pg. 32 lines 15-19
124		272	Pgs. 31-33, Figs. 7-10
125		273	" "
126		274	" "
127	234		Pg. 31 ln. 14 - Pg. 32 ln. 14
128	235		" "
129	236		" "
130	237		" "
131	238		" "
132	239		" "
133	240		Pg. 27 lns. 20-23
134	241	275	Pg. 58 ln. 22 - Pg. 59 ln. 3
135	242	276	" "
136		277	Pg. 49 lns. 15-18
137		278	" "
138		279	" "
139		280	" "
140		281	Pg. 50 ln. 17 - Pg. 52 ln. 4
141		282	" "
142		283	" "
143		284, 285	Pg. 53 lns. 3-6
144			" "
145			See citation for claim 106
146			See citation for claim 107
147			See citation for claim 108
148			See citation for claim 109
149			Pg. 52 ln. 18 - Pg. 53 ln. 21
150		265	" "

151		266	" "
152		267	" "
153			See citations for claims 113 and 119
154			" "
155			" "
156			" "
157			" "
158			Pg. 49 Ins. 16-20
159			
160			Pg. 45 ln. 8 - Pg. 48 ln.18 and cites for claims 143,158
161			" "
162			" "
163			" "
164			See citations for claims 106 and 118
165			" "
166			See citation for claim 107
167			See citation for claim 108
168			See citation for claim 109
169			See citations for claims 113 and 119
170			" "
171			" "
172			" "
173			" "
174			Pg. 54 ln.16 - Pg. 58 ln. 5 and Figs. 5a and 5b
175			" "
176			" "
177			" "
178			" "
179			" "
180			" "
181			" "
182			" "
183	243	286	Pg. 23 ln. 12 - Pg. 24 ln. 15
184	244	287	" "
185			See citation for claim 106
186			See citation for claim 107
187			See citation for claim 108
188			See citation for claim 109
189			See citations for claims 113 and

			118-125
190			" "
191			" "
192			" "
193			" "
194			" "
195	246	288	Pg. 54 ln.16 - Pg. 58 ln. 5
196	247	289	" "
197	248	290	" "
198			" "
199			
200		291	Pg. 33 ln. 20 - Pg. 36 ln. 20
201		292	" "
202		293	" "
203		294	" "
204		295	" "
205		296	" "
206		297	" "
207		298	See citation for claim 106
208			See citation for claim 121
209			See citation for claim 132

CONCLUSION

In view of the foregoing amendments and remarks, this application should now be in condition for allowance. A notice to this effect is respectfully requested. If the Examiner believes, after this amendment, that the application is not in condition for allowance, the Examiner is requested to call the Applicants' attorney at the telephone number listed below to address any outstanding issues relating to the allowability of the application.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 23/2825.

Respectfully submitted,

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Marked-Up Specification

The paragraph beginning at line 12 of page 18 has been rewritten as follows:

To understand these systems and methods it is first useful to understand a lighting fixture which could be built and used in embodiments of this invention. FIG. 2 depicts one embodiment of a lighting module which could be used in one embodiment of the invention, a lighting fixture (300) is depicted in block diagram format. The lighting fixture (300) includes two components, a processor (316) and a collection of component illumination sources (320), which is depicted in FIG. 2 as an array of light emitting diodes. In one embodiment of the invention, the collection of component illumination sources comprises at least two illumination sources that produce different spectrums of light. The collection of component illumination sources (320) are arranged within said lighting fixture (300) on a mounting (310) [(350)] in such a way that the light from the different component illumination sources is allowed to mix to produce a resultant spectrum of light which is basically the additive spectrum of the different component illumination sources. In FIG. 2, this is done by placing the component illumination sources (320) in a generally circular area, it could also be done in [other] any other manner as would be understood by one of skill in the art, such as a line of component illumination sources, or another geometric shape of component illumination sources. The term “processor” is used herein to refer to any method or system for processing, for example, those that process in response to a signal or data and/or those that process autonomously. A processor should be understood to encompass microprocessors, microcontrollers, programmable digital signal processors, integrated circuits, computer software, computer hardware, electrical circuits, application specific integrated circuits, programmable logic devices, programmable gate arrays, programmable array logic, personal computers, chips, and any other combination of discrete analog, digital, or programmable components, or other devices capable of providing processing functions.

The paragraph beginning at line 11 of page 21 has been rewritten as follows:

The foregoing embodiments of a lighting fixture (300) will generally reside in one of any number of different housings. Such, housing is, however, not necessary, and the lighting fixture (300) could be used without a housing to still form a lighting fixture. A housing may provide for lensing of the resultant light produced and may provide protection of the lighting fixture (300) and its components. A housing may be included in a lighting fixture as this term is used

throughout this document. FIG. 4 shows an exploded view of one embodiment of a lighting fixture of the present invention. The depicted embodiment comprises a substantially cylindrical body section (362), a lighting fixture (364), a conductive sleeve (368), a power module (372), a second conductive sleeve (374), and an enclosure plate (378). It is to be assumed here that the lighting fixture (364) and the power module (372) contain the electrical structure and software of lighting fixture (300) a different power module and lighting fixture (300) as known to the art, or as described in United States Patent Application Ser. No. 09/215,624 the entire disclosure of which is herein incorporated by reference. Screws (382), (384), (386), (388) allow the entire apparatus to be mechanically connected. Body section (362), conductive sleeves (368) [(364)] and (374) and enclosure plate (378) are preferably made from a material that conducts heat, such as aluminum. Body section (362) has an emission end (361), a reflective interior portion (not shown) and an illumination end (363). Lighting module (364) is mechanically affixed to said illumination end (363). Said emission end (361) may be open, or, in one embodiment may have affixed thereto a filter (391). Filter (391) may be a clear filter, a diffusing filter, a colored filter, or any other type of filter known to the art. In one embodiment, the filter will be permanently attached to the body section (362), but in other embodiments, the filter could be removably attached. In a still further embodiment, the filter (391), need not be attached to the emission end (361) of body portion (362) but may be inserted anywhere in the direction of light emission from the lighting fixture (364). Lighting fixture (364) may be disk-shaped with two sides. The illumination side (not shown) comprises a plurality of component light sources which produce a predetermined selection of different spectrums of light. The connection side may hold an electrical connector male pin assembly (392). Both the illumination side and the connection side can be coated with aluminum surfaces to better allow the conduction of heat outward from the plurality of component light sources to the body section (362). Likewise, power module (372) is generally disk shaped and may have every available surface covered with aluminum for the same reason. Power module (372) has a connection side holding an electrical connector female pin assembly (394) adapted to fit the pins from assembly (392). Power module (372) has a power terminal side holding a terminal (398) for connection to a source of power such as an AC or DC electrical source. Any standard AC or DC jack may be used, as appropriate.

The paragraph beginning at line 13 of page 55 has been rewritten as follows:

FIG. 29 shows one embodiment of a lighting fixture according to this disclosure which could be used as a replacement **fluorescent** [**florescent**] tube in a housing such as the one in FIG. 28. The lighting fixture may comprise, in one embodiment, a variation on the lighting fixture (5000) in FIGS. 5a and 5b. The lighting fixture can comprise a bottom portion (1101) with a generally rounded underside (1103) and a generally flat connection surface (1105). The lighting fixture also comprises a top portion (1111) with a generally rounded upper portion (1113) and a generally flat connection surface (1115). The top portion (1111) will generally be comprised of a translucent, transparent, or similar material allowing light transmission and may comprise a filter similar to filter (391). The flat connection surfaces (1105) and (1115) can be placed together to form a generally cylindrical lighting fixture and can be attached by any method known in the art. Between top portion (1111) and bottom portion (1101) is a lighting fixture (1150) which comprises a generally rectangular mounting (1153) and a strip of at least one component illumination source such as an LED (1155). This construction is by no means necessary and the lighting fixture need not have a housing with it or could have a housing of any type known in the art. Although a single strip is shown, one of skill in the art would understand that multiple strips, or other patterns of arrangement of the illumination sources, could be used. The strips generally have the component LEDs in a sequence that separates the colors of LEDs if there are multiple colors of LEDs but such an arrangement is not required. The lighting fixture will generally have lamp connectors (2504) for connecting the lighting fixture to the existing lamp couplers **(2408) (e.g., as shown in Fig. 28) [(2008)]**. The LED system may also include a control circuit (2510). This circuit may convert the ballast voltage into D.C. for the LED operation. The control circuit (2510) may control the LEDs (1155) with constant D.C. voltage or control circuit (2510) may generate control signals to operate the LEDs. In a preferred embodiment, the control circuit (2510) would include a processor for generating pulse width modulated control signals, or other similar control signals, for the LEDs.

MARKED-UP CLAIMS

Claims 1, 16, 17, 21, 22, 25, 31-33, 66, 74-76, 79, 80 and 82-85 have been amended as follows:

1. (Amended) A lighting fixture for generating white light, [said fixture] comprising:

a plurality of component illumination sources, said plurality including component illumination sources producing electromagnetic radiation of at least two different spectrums, each of said spectrums having a maximum spectral peak outside the region 510 nm to 570 nm; and

a mounting holding said plurality, said mounting designed to allow said spectrums of said plurality to mix and form a resulting spectrum;

wherein[,] said resulting spectrum is continuous within the photopic response of the human eye; and

wherein at least one of the plurality of component illumination sources has a maximum spectral peak less than 400 nm.

16. (Amended) [The lighting fixture of claim 1] A lighting fixture for generating white light, comprising:

a plurality of component illumination sources, said plurality including component illumination sources producing electromagnetic radiation of at least two different spectrums, each of said spectrums having a maximum spectral peak outside the region 510 nm to 570 nm; and

a mounting holding said plurality, said mounting designed to allow said spectrums of said plurality to mix and form a resulting spectrum;

wherein said resulting spectrum is continuous within the photopic response of the human eye; and

wherein at least one of [said] the plurality of component illumination sources has a maximum spectral peak greater than 700 nm.

17. (Amended) A lighting fixture comprising:

a plurality of LEDs, each of said plurality [producing] adapted to produce one of three preselected spectrums, each of said spectrums having a maximum spectral peak outside the region bounded by 530nm and 570nm;

wherein the lighting fixture is configured such that additive interference of said spectrums results in white light that can be controlled to produce white light within a range of color temperatures;

a controller enabling a particular color temperature within said range of color temperatures to be selected, and a signal to be generated representing that color temperature; and

a processor in communication with said plurality of LEDs, said processor capable of receiving said signal from said controller and controlling the intensity of each of said plurality of LEDs in response thereto.

21. (Amended) The lighting fixture of claim [20] 17, wherein said range of color temperatures extends from about 500K to about 10,000K.

22. (Amended) The lighting fixture of claim [20] 17, wherein said range of color temperatures extend from about 2300K to about 4500K.

25. (Amended) A lighting fixture for replacing [florescent] fluorescent tubes comprising:

a mounting;

at least two component illumination sources mounted on said mounting;

a connector mounted on said mounting, said connector capable of connecting with a device adapted for holding [florescent] fluorescent tubes to receive power from said device and provide power to said at least two component illumination sources; and

a control circuit for controlling said at least two component illumination sources.

31. (Amended) The lighting fixture of claim [24] 28, wherein said housing includes at least one of a transparent portion and a translucent portion.

32. (Amended) The lighting fixture of claim 25, wherein said control circuit [can] is configured to control said at least two component illumination sources based on the power provided by said [lamp] device adapted for holding fluorescent tubes.

33. (Amended) The lighting fixture of claim 25, wherein [said lighting fixture produces] said control circuit and said at least two components illumination sources are configured such that a mixing of radiation from the at least two component illumination sources is capable of producing white light.

66. (Amended) A lighting fixture for generating white-light, [said fixture] comprising:

a plurality of component illumination sources including at least one white LED, said plurality including component illumination sources producing electromagnetic radiation of at least two different spectrums[.]; and

a mounting holding said plurality, said mounting designed to allow said spectrums of said plurality to mix and form a resulting spectrum;

wherein[,] the visible portion of said resulting spectrum has intensity greater than background noise at its lowest spectral valley.

74. (Amended) The lighting fixture of claim 73, further comprising:

a controller[, said controller enabling] configured to control the plurality of component illumination sources to selectably generate the white light from the lighting fixture at a particular color temperature within said range of color temperatures [to be selected, and to have said lighting fixture produce said particular color temperature].

75. (Amended) The lighting fixture of claim 74, wherein the [CRI of the lighting fixture] controller is configured to control the plurality of component illumination sources such that white light produced at 4800K has a Color Rendering Index (CRI) value of [is] at least 80.

76. (Amended) The lighting fixture of claim 75, wherein the [CRI of the lighting fixture] controller is configured to control the plurality of component illumination sources such that white light produced at [of] 2300K has a Color Rendering Index (CRI) value of [is] at least 50.

79. (Amended) The lighting fixture of claim [76] 78, wherein said LED produces white light.

80. (Amended) A lighting fixture for generating white light, [said fixture] comprising:

a plurality of component illumination sources including at least one white LED, said plurality including component illumination sources [and] producing electromagnetic radiation of at least two different spectrums; and

a mounting holding said plurality, said mounting designed to allow said spectrums of said plurality to mix and form a resulting spectrum;

[wherein said resulting spectrum does not have a valley at a first wavelength longer than a second wavelength at a maximum spectral peak within the photopic response of the human eye] wherein each spectral valley wavelength of the resulting spectrum within a photopic response of a human eye is less than a maximum spectral peak wavelength of the resulting spectrum.

82. (Amended) The lighting fixture of claim 80, wherein said resulting spectrum does not have a spectral valley [at a] wavelength longer than a [wavelength at a] maximum spectral peak wavelength in [the area] a range from 400 nm to 700 nm.

83. (Amended) The lighting fixture of claim [78] 80, wherein said white light can be generated at a color temperature within a preselected range of color temperatures.

84. (Amended) A lighting fixture of claim [81] 83, wherein said range of color temperatures includes at least one color temperature from the range 500K to 2500K.

85. (Amended) A method for generating light comprising:

A) mounting a plurality of component illumination sources, including at least one white LED, producing electromagnetic radiation of at least two different spectrums in such a way as to mix the spectrums; and

B) choosing said at least two different spectrums in such a way that the mix of the spectrums forms a resulting spectrum having an [has] intensity greater than background noise at its lowest spectral valley within the photopic response of the human eye.